

AMENDMENT UNDER 37 C.F.R. § 1.111
U.S. Application No. 09/940,474
Attorney Docket No. Q65911

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (Currently amended) A separator for non-aqueous electrolyte secondary battery, wherein the separator comprises a shut-down layer, a heat-resistant microporous layer, and a spacer having a form of particles, fibers, net or porous film on the surface of the heat-resistant microporous layer,

wherein the heat-resistant microporous layer comprises at least one heat-resistant resin selected from resins having a temperature of deflection under load of 18.6 kg/cm² of 100° C or more, and

wherein the thickness of the spacer is from 0.02 to 3µm.

2. (Original) The separator for non-aqueous electrolyte secondary battery according to claim 1, wherein the heat-resistant microporous layer consists of heat-resistant resin.

Claim 3 (Canceled)

4. (Previously presented) The separator for non-aqueous electrolyte secondary battery according to claim 1, wherein the spacer is an electrochemically stable organic polymer, or an

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electrochemically stable organic layer polymer containing an electrochemically stable inorganic compound.

5. (Original) The separator for non-aqueous electrolyte secondary battery according to claim 1, wherein the spacer has a form of particles and a particle diameter of 3 μm or less.

6. (Original) The separator for non-aqueous electrolyte secondary battery according to claim 1, wherein the static friction coefficient between the spacer-disposed separator surface and a stainless steel surface ground by a 1000 grit polishing paper is 0.5 or less.

7. (Original) The separator for non-aqueous electrolyte secondary battery according to claim 1, wherein the spacer is formed by coating an application liquid containing an electrochemically stable substance on the surface of the heat-resistant microporous layer.

8. (Previously presented) The separator for non-aqueous electrolyte secondary battery according to claim 7, wherein the application liquid is a suspension.

9. (Previously presented) The separator for non-aqueous electrolyte secondary battery according to claim 4, wherein the electrochemically stable substance is an organic polymer selected from the group consisting of a polyolefin, a polyolefin copolymer, a fluorine-containing polymer, a polycarbonate, an aromatic polyester, a polyethylene terephthalate and a cellulose.

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10. (Previously presented) A non-aqueous electrolyte secondary battery including the separator for non-aqueous electrolyte battery according to any one of claims 1 to 8.

11. (Original) The non-aqueous electrolyte secondary according to claim 10, wherein the spacer is adjacent to a cathode.

12. (Previously presented) A separator for non-aqueous electrolyte secondary battery, the separator comprising a shut down layer, a heat-resistant microporous layer, and a spacer having a form of particles, fibers, net or porous film, on the surface of the heat-resistant microporous layer, wherein the heat-resistant microporous layer comprises at least one heat-resistant resin selected from resins having a temperature of deflection under load of 18.6 kg/cm² of 100° C or more, and the shut-down layer, the heat-resistant microporous layer and the spacer being in this order.